

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 03-044967

(43)Date of publication of application : 26.02.1991

(51)Int.Cl.

H01L 29/48

(21)Application number : 01-180986

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(22)Date of filing : 12.07.1989

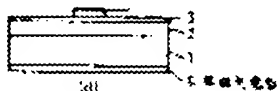
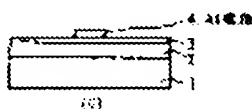
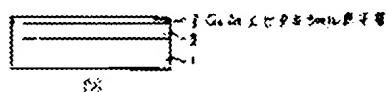
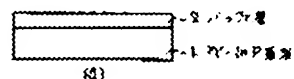
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## (54) MANUFACTURE OF SEMICONDUCTOR DEVICE

### (57)Abstract:

**PURPOSE:** To effectively realize an InP Schottky junction by forming a GaAs epitaxial atomic layer of one conductivity type on a InP crystal of one conductivity type and then metallic electrodes in contact with the epitaxial layer.

**CONSTITUTION:** A buffer layer 2 is first formed on an Sn-doped n<sup>+</sup>-InP substrate 1 by an epitaxial growth method. Then an Sn-doped GaAs atomic layer 5 is formed on the buffer layer 2 as an atomic layer 5 by an atomic-layer epitaxial growth method. Finally, an A electrode 4 is formed on the GaAs atomic layer 3 by vapor deposition and a substrate-side electrode 5 is formed by vapor-depositing and alloying Au and Sn on the substrate 1 side. The electrodes 4 and 5 respectively form a Schottky and ohmic electrodes. The atomic layer 3 of the Schottky junction type diode thus formed is thin in thickness and the extension of the depletion layer can be decided easily. Thus an InP Schottky junction can be realized effectively.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]